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ABSTRACT OF THE DISCLOSURE

The present invention relates to an optical communication system including a structure for suppressing deterioration of transmission characteristics of signals added at each of nodes arranged in an optical transmission line, and amethod of assigning signal channels. The optical communication system includes the optical transmission line for transmitting signals of plural channels between a transmitter and a receiver, and one or more nodes are arranged at predetermined positions of the optical transmission line. Each of the nodes includes an ADM for adding signals of a predetermined channel to the optical transmission line, and a signal channel at which the absolute value of accumulated—dispersion up to the receiver becomes smallest among signal channels which can be added is assigned to each of the nodes in advance or dynamically.